

OCT 27 2006

REMARKS

Claims 1-33 and 39-40 are pending herein.

1. Claims 8-10, 15-20, 22-23 and 33 were rejected under §112, second paragraph. This rejection is respectfully traversed for the following reasons.

Claim 7 recites that the substrate is translated through the fluid medium in a reel-to-reel process, and claim 8 further recites that the substrate is translated continuously through the fluid medium. Claim 8 further limits claim 7 by requiring that the translation is executed in a continuous manner while subjecting the substrate to the cleaning step. That is, claim 7 does not require a continuous translation during cleaning. Accordingly, the rejection with respect to claim 8 should be withdrawn. As to the remaining claims, Applicants submit that the amendments to the various dependent claims attend to the section 112 issues noted by the PTO.

2. Claims 1-33 were rejected under §102(e) over Ignatiev et al. This rejection is respectfully traversed for the following reasons.

Each of the independent claims recites a method for forming a superconductive device that includes plasma treating the substrate. Ignatiev et al. disclose that a metal tape substrate should be clean and free of contaminants and suggest, among various cleaning procedures, use of an ultrasonic bath. However, Ignatiev et al. do not disclose or even remotely suggest a process that incorporates plasma treatment as claimed.

Since Ignatiev et al. clearly fail to teach each and every feature of the present claims, withdrawal of the §102 rejection over Ignatiev et al. is respectfully requested.

3. Claims 1-33 were rejected under §103 over Nenetschek et al. in combination with Ignatiev et al. This rejection is respectfully traversed for the following reasons.

Apparently, the PTO has relied upon Nenetschek et al. for disclosure of electropolishing of a metal tape substrate followed by deposition of constituent layers of a high-temperature superconducting structure. The PTO has further looked to Ignatiev et al., addressed above, for teaching of an ultrasonic bath. It appears that the PTO recognizes that Nenetschek et al. and Ignatiev et al. fail to teach a method of forming a superconductive device that incorporates a plasma treatment step. However, the PTO has reasoned that "plasma cleaning/pre-treatment is conventional in the art as a viable alternative to other conventional pre-cleaning or pre-treatment steps to produce a 'clean' substrate for successful subsequent coating." (Office Action, page 6, first paragraph).

Foremost, Applicants submit that the PTO has failed to provide a reference teaching or even remotely suggesting utilizing a plasma treatment step in the context of forming a superconductive device. The PTO is respectfully requested to provide a reference to support the PTO's contention.

Further, Applicants respectfully submit that the incorporation of a plasma treatment step in the context of a method of forming a superconductive device is of notable significance. Applicants have discovered that the commonly incorporated techniques such as those disclosed by Ignatiev et al. (i.e., vapor degreaser, mechanical cleaner, ultrasonic bath, liquid cleaner, etc.) have been found to only be partly effective in the creation of a surface suitable for HTS device fabrication. Applicants have discovered that this is particularly true in the context of operations that incorporate polishing, such as electropolishing, in the surface preparation process flow. See, for example, claim 11. In this particular case, Applicants have discovered that operations such as polishing can impart impurities such as carbonaceous impurities, which heretofore have been considered by the art to be of little or no consequence. While applicants do not dispute that plasma treating is used in various technology areas (e.g., deposition processes for semiconductor fabrication), the state of the art does not teach or suggest adapting plasma treating to HTS substrate treatment. Further, the state of the art fails to teach or even remotely recognize the particular efficacy of plasma treatment in the context of HTS device fabrication.

For at least the foregoing reasons, Applicants respectfully submit that the presently claimed invention would not have been obvious over Nenetschek et al. in view of Ignatiev et al. Accordingly, reconsideration and withdrawal of this §103 rejection are respectfully requested.

4. Claims 25 and 26 were rejected in further view of Goyal et al. Claims 15-21 were rejected in further view of Glowacki et al. Applicants submit that the additional secondary references relied upon by the PTO fail to overcome the deficiencies of Nenetschek et al. and Ignatiev et al. discussed above. Accordingly, withdrawal of these rejections is respectfully requested as well.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone Applicants' undersigned representative at the number listed below.

The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

Date

10/27/06

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